Gastroenterology and Hepatology From Bed to Bench.

ORIGINAL ARTICLE

Royal jelly accelerates healing of acetate induced gastric ulcers in male rats

Mohammad Sofiabadi[1], Fatemeh Samiee-Rad[2]
[1] *Cellular and Molecular Research Center, Qazvin University of Medical Sciences, Qazvin, Iran*
[2] *Metabolic Diseases Research Center, Qazvin University of Medical Sciences, Qazvin, Iran*

ABSTRACT

Aim: This study examined the healing potential of royal jelly on the acetic acid induced wounds healing in male rat's gastric mucosa.
Background: Scientific reports suggest that, bee products can help in the wounds healing.
Methods: 96 adult male Wistar rats were divided into in 4 groups as follows: control, omeprazole 20 mg/kg, and royal jelly 50 and 200 mg/kg). Wound was induced in stomach mucosa of each rat with 100% acetic acid. Samples groups received omeprazole or royal jelly from 1st to 14th day after acetic ulcer induction. Gastric ulcer healing and histopathological parameters were evaluated on 4, 7, 10, 15th days after ulceration. Both descriptive and statistical analyses were used. $P < 0.05$ was considered as significant.
Results: The royal jelly administration significantly reduced the depth of lesion in comparison with the control group ($p<0.05$) and attuned histopathological changes in the treatment groups. The largest healing effect was demonstrated with royal jelly on 10th treatment day, at a higher concentration (200 mg/kg).
Conclusion: These findings supported that royal jelly had effectively contributed to the wound healing, valid gastroprotective activity, and can be used for peptic ulcer therapy.

Keywords: Royal jelly, Gastric ulcer, Rat.
(Please cite as: **Sofiabadi M, Samiee-Rad F. Royal jelly accelerate healing of acetate induced gastric ulcers in male rats. Gastroenterol Hepatol Bed Bench 2020;13(1):18-22).**

Introduction

Beehive products such as honey, propolis, and royal jelly (RJ) are attractive ingredients of healthy foods. These crops have been used since ancient times as a part of traditional medicine. Royal jelly has a complex composition of proteins, fats, fatty acids, free amino acids, organic acids, sterols, phenols, sugars, mineral salts, vitamins, and other unknown substances, which was reported that some of these compounds can reduce the inflammatory response and infectious process and improve the tissues blood circulation (1). Previous research demonstrated that the royal jelly antioxidant property can be associated with the biological activity of free amino acids (2).

Received: 22 October 2019 *Accepted*: 8 December 2019
Reprint or Correspondence: **Fatemeh. Samiee-Rad, PhD.**
Department of Pathology, Faculty of Medical School, Qazvin University of Medical Sciences, Qazvin, Iran
E-mail: fsamieerad@gmail.com
ORCID ID: 0000-0001-6091-4347

The more beneficial effects of royal jelly are mainly attributed to the phenolic compounds such as flavonoids. Flavonoids play role on the activity of some enzymes including cyclo-oxygenase and lipoxygenase (1). Royal jelly also regulated the balance between the pro-oxidative and antioxidative effectors (3).

Royal Jelly has been considered and used since old times for health, and it is still very important in Asian traditional and folkloristic medicine. Royal Jelly is honeybee hypopharyngeal gland secretion of young worker bee, and is an exclusive nourishment for bee queen. Recently, RJ and its components have been re-subjected to extensive usage for several investigations. Also, it was reported that the crude royal jelly or its major proteins such as royalisin, 10-hydroxy-2-decenoic acid, and jelleines show a highest effect on different types of bacteria, especially on Gram positive bacteria (4).